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(54) MANUFACTURE OF ANISOTROPIC OXIDE MAGNETIC POWDER AND OF PLASTIC MAGNET

(57)Abstract:

PURPOSE: To improve magnetic characteristics by blending  $\text{Fe}_2\text{O}_3$  and  $\text{Fe}_3\text{O}_4$  such that the molar ratio thereof is (1-1.05):8, and adding Zn such that it is 1.0-10mol% of  $\text{Fe}^{2+}$ , and calcining them under specific conditions.

CONSTITUTION: For manufacturing anisotropic oxide magnetic powder having a hexagonal structure,  $\text{Fe}_2\text{O}_3$  and  $\text{Fe}_3\text{O}_4$  are blended as iron oxides such that the mole ratio of  $\text{Fe}^{2+}$  and  $\text{Fe}^{3+}$  is (1-1.05):8. Additionally, zinc oxide and/or a compound that changes to zinc oxide by heating is added such that Zn is 1.0-10mol% of  $\text{Fe}^{2+}$ , and is calcined at temperature 1150-1250°C and at oxygen partial pressure  $1 \times 10^{-4}$  to  $1 \times 10^{-3}$  atm. The calcined powder is ground and rendered to a heat-treatment for uniformization. Hereby, a W type hexagonal system ferrite magnetic powder can be manufactured with simplified control and hence magnetic properties of a plastic magnet can be improved using magnetic powder.

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